II. CLAIM AMENDMENTS

1-12. (Cancelled)

13. (Currently Amended) A neuro-ventilatory efficiency computation method for monitoring/controlling ~~the~~a level of ventilatory assist produced by a ventilatory assistance system, comprising:

a) receiving a first signal representative of a subject's inspiratory effort ~~and~~; the first signal having a first amplitude;

b) receiving a second signal representative of a lung volume ~~and~~of the subject, the second signal having a second amplitude;

c) calculating a neuro-ventilatory efficiency representative parameter in relation to ~~between~~ said first and second amplitudes at predetermined intervals; and

d) increasing or decreasing the ventilatory assist level depending on whether a present calculated value of ~~said relation~~ the neuro-ventilatory efficiency representative parameter is higher or lower than a past calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter by an amount exceeding a given threshold.

14. (Currently Amended) A neuro-ventilatory efficiency computation method as in claim 13, wherein ~~said relation~~ calculating a neuro-ventilatory efficiency representative

parameter comprises calculating a ratio between said first and second amplitudes at predetermined time intervals.

15. (Currently Amended) A neuro-ventilatory efficiency computation method as in claim 13, wherein ~~said relation~~ calculating a neuro-ventilatory efficiency representative parameter comprises calculating a ratio between said first and second amplitudes at intervals when one of said first and second amplitudes reaches a predetermined level.

16. (Currently Amended) A neuro-ventilatory efficiency computation method as in claim 13, wherein increasing or decreasing the ventilatory assist level ~~increasing or decreasing~~ comprises increasing the ventilatory assist level when said present calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter is higher than said past calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter by an amount exceeding the given threshold, and decreasing the ventilatory assist level when said present calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter is lower than said past calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter by an amount exceeding said given threshold.

17. (Previously Presented) A neuro-ventilatory efficiency computation method as in claim 13, wherein receiving the second signal representative of a lung volume comprises receiving a signal representative of a given lung volume.

18. (Currently Amended) A neuro-ventilatory efficiency computation method as in claim 13, wherein receiving the first signal representative of the subject's inspiratory effort comprises receiving a signal representative of a given level of inspiratory effort.

19. (Currently Amended) A neuro-ventilatory efficiency computation method as in claim 13, further comprising generating an alarm signal when said present calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter is higher or lower than the past calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter by an amount exceeding said given threshold.

20. (Previously Presented) A neuro-ventilatory efficiency computation method as in claim 13, comprising manually performing said increasing or decreasing of the ventilatory assist level.

21. (Currently Amended) A neuro-ventilatory efficiency computation method as in claim 13, comprising expressing the first signal representative of the subject's inspiratory effort as one of the following values: a mean of said first amplitude, a median of said first amplitude, and a peak of said first amplitude.

22. (Previously Presented) A neuro-ventilatory efficiency computation method as in claim 13, comprising expressing the second signal representative of a lung volume as one of the

following values: a mean of said second amplitude, a median of said second amplitude, and a peak of said second amplitude.

23. (Currently Amended) A neuro-ventilatory efficiency computation method as in claim 13, wherein receiving the first signal representative of inspiratory effort comprises receiving an electromyographic signal from at least one muscle of ~~a patient~~the subject.

24. (Currently Amended) A neuro-ventilatory efficiency computation device for monitoring/controlling ~~the~~a level of ventilatory assist produced by a ventilatory assistance system, comprising:

a) a first input for receiving a first signal representative of a subject's inspiratory effort ~~and~~; the first signal having a first amplitude;

b) a second input for receiving a second signal representative of a lung volume ~~and~~of the subject, the second signal having a second amplitude;

c) ~~means for calculating~~ a calculator of a neuro-ventilatory efficiency representative parameter in relation ~~between~~to said first and second amplitudes at predetermined intervals; and

d) ~~means for increasing or decreasing the ventilatory assist level depending~~a control dependent on whether a present calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter is higher or lower than

a past calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter by an amount exceeding a given threshold to increase or decrease the ventilator assist level.

25. (Currently Amended) A neuro-ventilatory efficiency computation device as in claim 24, wherein:

the ~~calculating means~~calculator comprises a divider responsive to the first and second amplitudes for calculating a ratio between said first and second amplitudes at predetermined intervals;

the ~~increasing or decreasing means~~control comprises:

a comparator responsive to the present calculated value and the past calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter for producing a signal representative of a comparison between a present calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter and a past calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter;

an adder interposed between the comparator and the ventilatory assistance system for adding a preset increment to or subtracting a preset decrement from said ventilatory assist level when the comparison signal exceeds a given threshold.

26. (Currently Amended) A neuro-ventilatory efficiency computation device as in claim 24, wherein said ~~calculating means~~calculator comprises means for calculating said ~~relation~~neuro-ventilatory efficiency representative parameter at predetermined time intervals.

27. (Currently Amended) A neuro-ventilatory efficiency computation device as in claim 24, wherein said ~~calculating means~~calculator comprises means for calculating said ~~relation~~neuro-ventilatory efficiency representative parameter at intervals when one of said first and second amplitudes reach a predetermined level.

28. (Currently Amended) A neuro-ventilatory efficiency computation device as in claim 25, wherein said adder comprises means for adding said preset increment to said ventilatory assist level when said present calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter is higher than said past calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter by an amount exceeding said given threshold, and means for subtracting said preset decrement from said ventilatory assist level when said present calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter is lower than said past calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter by an amount exceeding said given threshold.

29. (Previously Presented) A neuro-ventilatory efficiency computation device as in claim 24, wherein the second signal

representative of a lung volume is a signal representative of a given lung volume.

30. (Currently Amended) A neuro-ventilatory efficiency computation device as in claim 24, wherein the ~~second~~first signal representative of the subject's inspiratory effort is a signal representative of a given level of inspiratory effort.

31. (Currently Amended) A neuro-ventilatory efficiency computation device as in claim 24, further comprising an alarm generator to produce an alarm signal when said present calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter is higher or lower than the past calculated value of said ~~relation~~neuro-ventilatory efficiency representative parameter by an amount exceeding said given threshold.

32. (Currently Amended) A neuro-ventilatory efficiency computation device as in claim ~~24~~25, wherein said adder comprises a manual adjustment system to add said preset increment to or subtracting said preset decrement from said ventilatory assist level.

33. (Currently Amended) A neuro-ventilatory efficiency computation device as in claim ~~22~~24, comprising means for expressing the first signal representative of the subject's inspiratory effort by means of one of the following values: a mean of said first amplitude, a median of said first amplitude, and a peak of said first amplitude.

34. (Previously Presented) A neuro-ventilatory efficiency computation device as in claim 24, further comprising means for expressing the second signal representative of a lung volume by means of one of the following values: a mean of said second amplitude, a median of said second amplitude, and a peak of said second amplitude.

35. (Currently Amended) A neuro-ventilatory efficiency computation device as in claim 24, wherein the first signal representative of the subject's inspiratory effort is an electromyographic signal from at least one muscle of ~~a patient~~the subject.